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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/558,266	04/25/2000	Nobuyuki Kambe	N19-.12-0033	8988

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EXAMINER
FERGUSON, LAWRENCE D

ART UNIT	PAPER NUMBER
1774	6

DATE MAILED: 04/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/558,266	KAMBE ET AL.	
	Examiner	Art Unit	
	Lawrence D Ferguson	1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 January 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 30-53* is/are pending in the application.

4a) Of the above claim(s) *30-40* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16 and 41-53* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. This action is in response to the amendment mailed January 03, 2002. Claims 17-29 were canceled and claims 41-53 were added rendering claims 1-16 and 41-53 pending, with claims 30-40 held to a non-elected invention based on earlier restriction requirement.

Claim Rejections – 35 USC 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. In claim 44, the phrases 'different levels' and 'plane within the material' are indefinite. Different levels is undefined and a plane within the material is undefined.

Claim Rejections – 35 USC § 102(b)

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 9 and 11-12 are rejected under 35 U.S.C. 102(b) as being unpatentable over Clark et al. (U.S. 4,728,591) for the reasons set forth in paragraph 12, in the previous office action, mailed July 18, 2001.

Claim Rejections – 35 USC § 103(a)

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 13-14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clark et al. (U.S. 4,728,591) for the reasons set forth in paragraph 15, in the previous office action, mailed July 18, 2001.

Claim Rejections – 35 USC § 103(a)

8. Claims 1-8, 11-12 and 15-16, 41-43, 45-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Debe et al. (U.S. 5,879,827) for the reasons set forth in paragraph 19, in the previous office action, mailed July 18, 2001. Debe does not explicitly disclose the range average particle diameter of the particles or photonic band gap. Because the reference has the same

materials with the same function as applicants, it would have been obvious to one of ordinary skill in the art to include the average particle diameter and photonic band gap in the range as claimed.

Claim Rejections – 35 USC § 102(b)

9. Claims 1, 3 and 8-12 are rejected under 35 U.S.C. 102(b) as being unpatentable over Alivisatos et al. (U.S. 5,751,018) for the reasons set forth in paragraph 22, in the previous office action, mailed July 18, 2001.

Response to Arguments

10. Applicant's remarks to the restriction requirement have been considered but are unpersuasive. Applicant argues MPEP 806.05(g) of the MPEP is not relevant to the cited groups. Applicant argues the plurality of integrated devices in claims 30-40 is of a similar nature as the plurality of self-assembled structures in claims 1-16. Examiner disagrees because MPEP 806.05(g) is related to a product and apparatus and claims 30-40, drawn to an article comprising a plurality of integrated devices is deemed to be an apparatus. The separation of the groups into different classes alone supports the restriction requirement being proper.

Applicant's remarks to 35 USC 112, second paragraph have been considered and overcome the rejection due to amendment and deletion of the indefinite claim language.

Applicant's arguments to 35 USC 102(b) as being anticipated by Clark et al. (U.S. 4,728,591) have been considered but are unpersuasive. Applicant argues the Clark patent does

not disclose all of the features of Applicant's claimed invention. Applicant states that claim 1 specifies the structures are localized in separate islands covering a portion of the layer in an integrated assembly and the Clark patent does not disclose islands of self-assembled structures as described in Applicants' specification. Examiner disagrees because Clark discloses a layer consisting of a self-assembled ordered material array of islands deposited on the surface through holes. Clearly from Figure 5 it shows structures localized in separate islands covering a portion of the layer in an integrated assembly. Applicant cites In re Robertson, 49 USPQ2d 1949, 1950 (Fed Cir 1999) stating a reference only anticipates a claim if the reference explicitly or inherently discloses all of the claimed features. The Clark reference anticipates the claim limitations of 1,9, 11 and 12 based on the disclosure of the prior art and the figures therein. Applicant further argues the Clark patent does not disclose "islands" as disclosed by Applicants' claims but are elements of a self-assembled structure itself. Examiner disagrees because the disclosure of the reference along with Figure 5 supports separate islands, i.e., separate, self-assembled domains.

Applicant's arguments to 35 USC 102(b) as being anticipated by Alivisatos et al. (U.S. 5,751,018) have been considered but are unpersuasive. Applicant argues the Alivisatos patent does not disclose a plurality of separate islands of self-assembled material on a layer. Applicant argues the reference is directed to methods for forming a single domain of self-assembled particles and Alivisatos does not disclose a plurality of separate islands of self-assembled material on a layer. Examiner respectfully disagrees because the reference discloses self-assembled monolayers organized into an assembly of clusters and Figure 4 supports a plurality of separate islands.

Applicant's arguments to 35 USC 103(a) as being unpatentable over Clark et al. (U.S. 4,728,591) have been considered but are unpersuasive. Applicant argues the Clark patent does not disclose a plurality of self-assembled islands and since the patent does not teach or suggest a plurality of islands of self-assembled material on a substrate, the Clark patent does not render claim 1 or any claims depending from claim 1 obvious. This is not true because Clark shows discloses a layer consisting of a self-assembled ordered material array of islands deposited on the surface through holes. Clearly from Figure 5 it shows structures localized in separate islands covering a portion of the layer in an integrated assembly.

Applicant's arguments to 35 USC 103(a) as being unpatentable over Debe et al. (U.S. 5,879,827) have been considered but are unpersuasive. Applicant argues the Debe patent does not teach or suggest a plurality of islands of self-assembled material, with each island being a self-assembled domain. Applicant states the islands of Debe relates to the deposition of catalyst onto the whiskers. Examiner disagrees because Debe in fact shows self-assembled layers as well as discrete islands in column 10, lines 15-17 and column 12, lines 65-66 and the catalyst material is considered to be self-assembled because there is no outside force to help with the assembly. The material comprising the catalyst is indeed self-assembling. These whiskers Applicant point out are comprised within the self-assembled material however they are not what the Debe patent was referenced for. The patent was referenced in order to show the self-assembled layers with islands exhibiting fluorescent particles are known within the art and is deemed to be a suitable reference over the specified claims for Applicants' invention.

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Ferguson whose telephone number is (703) 305-9978. The examiner can normally be reached on Monday through Friday 8:30 AM – 4:30PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. Please allow the examiner twenty-four hours to return your call.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for

After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2351.

LDF

Lawrence D. Ferguson
Examiner
Art Unit 1774

CYNTHIA H. KELLY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

Cynthia H. Kelly